

The Builder.

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WHEN an eminent officer in the British Museum addressed a letter to the architects in November, 1845, relative to the formation of an extensive collection of British antiquities, we, in common with many others, were led to expect much more than it seems to have been intended; we fondly persuaded ourselves that we were at last, to obtain what we had long and earnestly striven for,—namely, a MUSEUM illustrative, amongst other things, of OUR NATIONAL ARCHITECTURE; and thereat were greatly rejoiced. In our report of the conversation at the meeting of the institute when the letter was read,* we find one member pointing to a previous application to the trustees of the British Museum to induce them to establish a museum of architecture, mentioning the manner in which a recent motion in the House of Commons by Mr. Wyse, to the same effect, had been negatived, and smiling with satisfaction the present determination of the trustees. Mr. Donaldson, in the same strain, alluded to what the French had done in this respect, and suggested that separate provincial museums should also be established, rather than bring all remains to London. And Mr. Britton said, he had advocated the establishment of such a museum for five and forty years; instanced many cases of the disappearance of architectural remains; and expressed his delight in finding he might yet see a museum of such national antiquities before he passed off the scene.

All this, however, was unfortunately premature. The national antiquities contemplated did not induce architectural antiquities, and without any disrespect to the excellent writer of the letter, or the trustees, whose intention is excellent so far as it goes, we were just as far, and we fear are just as far, from obtaining what is so much desired as we ever were.

Further efforts must therefore be made, and if the trustees of the British Museum still refuse to provide such a collection, and the Government will not interfere to obtain it either there or elsewhere, we would call on one or both of the archaeological associations to make the attempt.

Our present intention is to make a public appeal on this subject to the trustees; and to make that successful, we would solicit the good offices of THE MARQUIS OF NORTHAMPTON, as one of their body, who has given much attention to the study of architectural antiquities, and is much interested in their preservation. His lordship, as we have reason to know, admits fully the value of such a collection as we desire,—who, indeed, can doubt it?—but perhaps feels there are difficulties in the way, not of obtaining, but of housing it satisfactorily. For our own parts, we would ask no great extent of accommodation in the first instance, being satisfied that the value of such a museum would soon be universally recognized, and would enforce the provision of further space. Even in one small apartment, the Oxford Architectural Society have arranged a nucleus for such a collection, of considerable practical value. The examples would be arranged chronologically, and might embrace, even if the space were confined, mould-

ings in series (an important point), capitals, bosses, spandrels, corbels, tracery, shrines, &c. &c., and if the museum were on a proper scale, a series of arches, a series of windows, pillars, doorways, the varieties of groining, screens, and distinctive ornaments of every period. Diagrams might be used temporarily, to fill gaps in the series; carved woodwork, ironwork, tiles, alphabets, coloured decorations, and stained glass of the various periods, would of course be included, and would form a whole of the greatest immediate value to a very large class, and in result to the whole community.

Architecture occupies at this time the attention of many more in England than it did formerly; and when we call to mind our architects, clergy, builders, sculptors, painters, carvers, modellers, smiths, glass-painters, decorators, and others, it will be seen how large a portion of the public would be directly benefited by the establishment of a museum of architecture, to say nothing of the much greater number who would be indirectly so. As Mr. Wyse said, in his address to the House of Commons, on the 27th of June, 1845, "It is only by a juxtaposition of the monuments of art connected with the different epochs, from the earliest to the latest, that we can either duly estimate the past or produce for the future." He thought it was a cardinal mistake to call on artists to produce historical works, without the means of cultivating their powers, and ascertaining the spirit of the age they had to represent. These means ought to be afforded in a liberal and ample manner, worthy of so great a nation. Hitherto our artists have had but small means; their enthusiasm has been great, but their education has been limited.

A student, by drawing and comparing in such a museum as we desire, would gain there in a month a clearer knowledge of characteristics than he could otherwise in a year. To obtain a large and valuable collection would not be difficult or expensive, if once commenced; and how much that has been destroyed might have been preserved, had some public and recognized receptacle for ancient remains been opened long ago? Mouldering in cellars and lofts, there are yet many private collections which their owners would gladly place in any public repository, while there are two or three which should be obtained even at some cost. The question of cost, indeed, ought not to be considered; the education of a people should not be measured by money. In France, Germany, and Belgium, such collections are being rapidly made. England alone, who most needs them, is denied the advantage! England, where even the rulers are for the most part profoundly ignorant of art, and are unable to estimate rightly its powers and value!

Up to this time we have spoken only of a museum of mediæval architecture, and for this it is we must first strive; but we cannot shut our eyes to the importance of obtaining a collection ultimately, where architectural history, as a whole, might be studied; and where we might trace the gradual progress of unbroken connection, from the earliest recorded time till now, which distinguishes it. The prospect of this, however, is far distant; the other is visible, and easy of attainment; and if the distinguished nobleman we have named will aid a request to his co-trustees, that they will recommend the Government to provide, in the British Museum, for a collection illustrative of our national architecture, we shall have little doubt of a successful issue, and his lordship will be entitled to the warm thanks of his countrymen.

CHEMISTRY AS APPLIED TO CONSTRUCTION.

BY PROFESSOR GRIFFITHS.

INTRODUCTION.

CHEMISTRY, as applied to construction, is an extensive, important, and occasionally intricate department of practical science, the study of which cannot be abruptly undertaken; it will therefore be necessary to make a lengthened introduction to the subject.

This will materially facilitate all future proceedings, for the leading characters of the agents of chemical research will be gradually revealed, and this will be infinitely preferable to encountering them as perfect strangers, of whose qualifications we may be ignorant, although we receive them with courtesy.

It will therefore be the duty of the writer of these papers to unfold the portals of a vast and magnificent temple of science, abounding in stores of extraordinary discoveries, and important practical facts, more rich and inexhaustible than those appertaining to any other in the wide domain of human knowledge.

Chemistry, with its furnaces, crucibles, retorts, acids, alkalies, salts, and metals, may be deemed at first glance to have no connection whatever with construction, and therefore foreign to the profession of the architect, whereas the exact contrary is the case, for it will hereafter appear that chemistry is concerned in every material employed by him, from the pencil and paper with which he forms his first rude sketch, up to the marble and metal of which he constructs the most elaborate edifice.

"The true end of all science is to enrich human life with useful arts and inventions;" thus said the illustrious founder of "Inductive Philosophy," and the chemist, with honest pride, can hold forth to his fellow men the most convincing proofs of the truth of the above aphorism, and of the zeal with which he has laboured under its guidance.

Chemistry, applicable, as it is, to every department of science, art, and industry, neither admits of a very concise, nor perfectly accurate definition; but for the present purpose the following may suffice. Chemistry is that branch of natural knowledge which teaches us the properties of substances called elements, and of their mutual combinations; it inquires into the laws which affect, and into the powers which preside over, their union; it examines the proportions in which they combine, and the modes of separating them when combined, and endeavours to apply such knowledge to the explication of natural phenomena, and to useful purposes in the arts of life.

Such being the case, it is obvious that the mere physical or mechanical properties of the materials employed by the architect, demand little attention from the chemist; his leading, or sole study, is to ascertain, as far as possible, the composition, or the elements, of all forms of matter, and then he can afford information to the architect regarding the natural and artificial causes which either ensure the permanence of an edifice, or promote its degradation.

The following example will probably suffice to illustrate the business of the chemist. If a mass of marble be deprived of support, it falls to the ground, in obedience to the attraction of gravitation,—i.e. a mechanical attraction; the marble is hard, compact, requiring considerable force to break it, in consequence of its particles being held or bound together by attraction of aggregation, this is also mechanical attraction. The architect, the builder, and the engineer, can afford an immense fund of information to the chemist regarding the velocity of the fall of the mass of marble, and the force which holds its particles together; but he is far from resting satisfied with knowledge of such mechanical properties. He asks, "Can you inform me of what things the mass of marble consists, that is thus subject to the attraction of gravitation and attraction of cohesion?" To this question his fellow-labourers in the temples of the sciences can make no reply, and, therefore, the chemist draws upon the stores of his own to discover if there be another power of attraction totally different from mechanical attraction, which he expects will be attraction of composition. Mechanical processes will not aid the chemist in this investigation; for however he may break the mass of marble, or comminute it into the most impalpable dust, he only destroys its attraction of aggregation,—the minutest particle is still marble, as true

* See Vol. III., p. 335.